Green Building Services

Simple, Smart, Sustaining Solutions

Sustainable Preservation : Five Principles for Success

New Pathways

Seattle, WA

April 14th, 2008

1. *Learn from the success of others…*

Jean Vollum Natural Capital Center (Ecotrust)

LEED Gold 2001

PA: Holst Architecture
Project Size: 70,000 Sq. Ft.
Project Cost: $12.4 Million

LEED Credit Category	Achieved
Sustainable Sites	8
Water Efficiency	2
Energy and Atmosphere	5
Material and Resources	10
Indoor Environmental Quality	9
Innovation in Design	5
Total	39

Gerding Theater (Portland Armory)

LEED Platinum 2006
PA: GBD Architects
Project Size: 55,000 Sq. Ft.
Project Cost: $ 36.1 Million

LEED Credit Category	Achieved
Sustainable Sites	11
Water Efficiency	5
Energy and Atmosphere	10
Material and Resources	8
Indoor Environmental Quality	14
Innovation in Design	5
Total	53

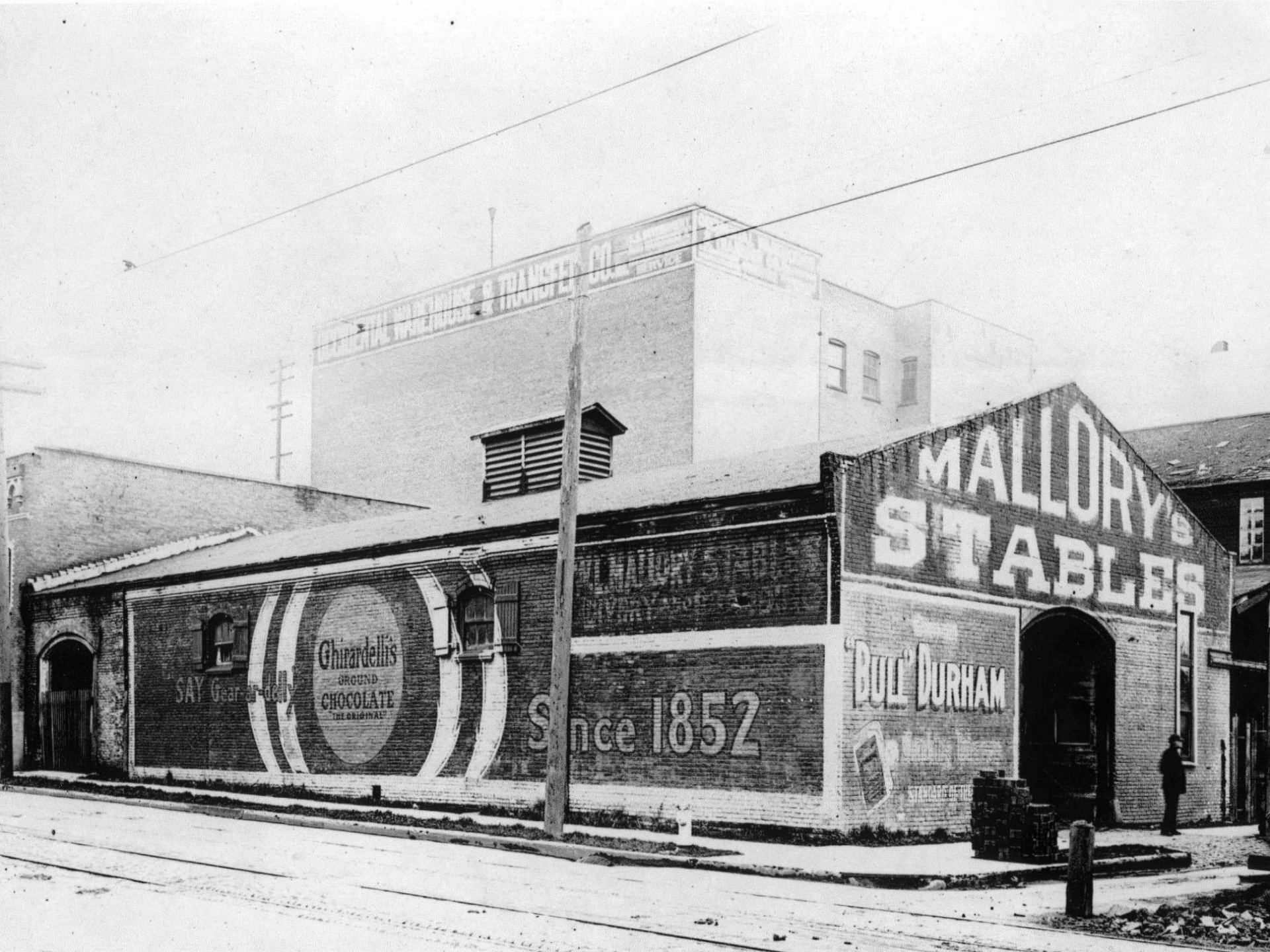
Balfour-Guthrie Building

LEED Silver 2003

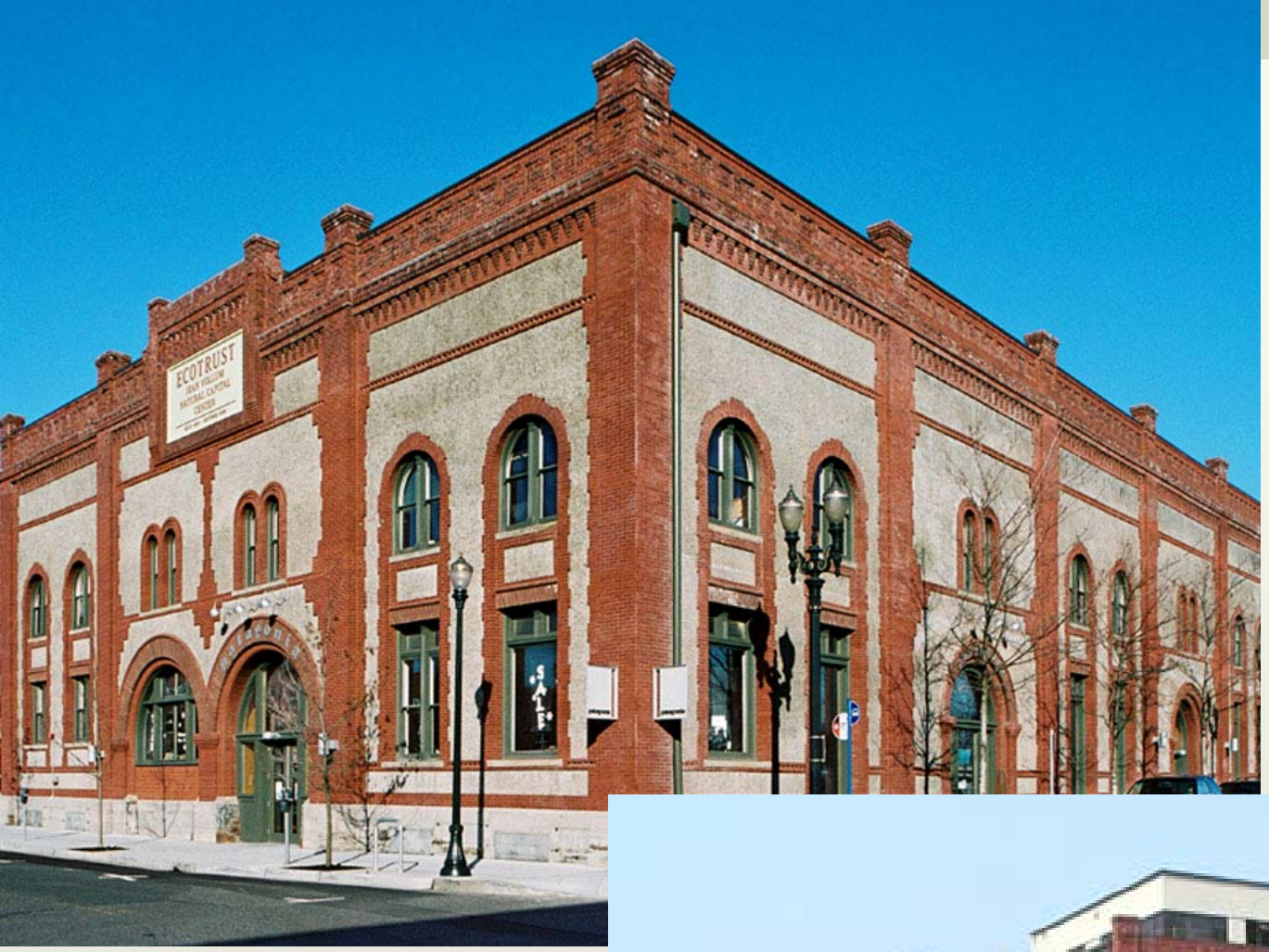
PA: Thomas Hacker Assoc.
Project Size: 19,000 Sq. ft.
Cost: $55 per sq. foot

LEED Credit Category	Achieved
Sustainable Sites	7
Water Efficiency	2
Energy and Atmosphere	6
Material and Resources	9
Indoor Environmental Quality	8
Innovation in Design	1
Total	33


Made in Oregon
OLD TOWN
FOR LEASE
503-224-2446
BREMIK


MALLORY'S
STABLES
"BULL" DURHAM
Ghirardelli's
GROUND
CHOCOLATE
THE ORIGINAL
Since 1852

2. Consult with SHPO/NPS early and often …


ECOTRUST
SALE

3. Implement an Ideal Design and Construction Process…

An Integrated Approach for Historic Projects

Project Planning and Programming

Assessment of Value

- Research/NR Nomination

Evaluation/Documentation of condition and treatment recommendations

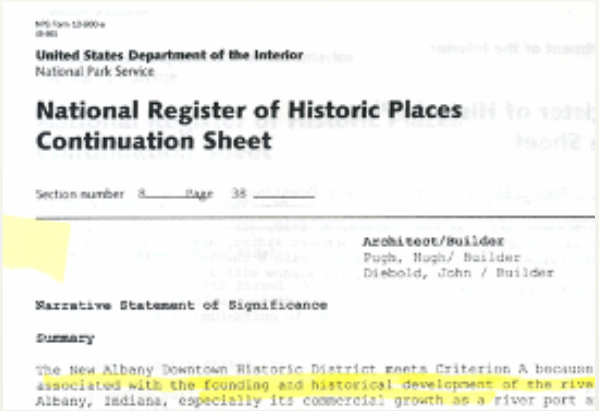
- Historic Structure Report
- Environmental assessment

Programming and Design Concept

Partners, Grants and Incentives

Determination of Feasibility

- Feasibility Study/Pro Forma


United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section number 8 Page 38

Architect/Builder
Pugh, Hugh/ Builder
Diebold, John / Builder

Narrative Statement of Significance

Summary

The New Albany Downtown Historic District meets Criterion A because
associated with the founding and historical development of the rive
Albany, Indiana, especially its commercial growth as a river port a

An Integrated Approach for Historic Projects

Project Design

Eco-charrette/Goal Setting

Design Concept

- Conceptual design, Schematic design

Design Review: Tax credits (part 1,2), Historic District, Code

- Local/SHPO/NPS

Design Development

Energy Modeling

Envelope Analysis

Design Commissioning

An Integrated Approach for Historic Projects

Construction and Implementation
Construction Documents
LEED Documentation
Bid
Construction
Building Systems Commissioning
Tax credits (part 3)
LEED Documentation
LEED Submission and Certification

4. If windows are an issue, understand the role that they play…

Historic Windows, a lightening rod!

What Replacement Windows Can't Replace: The Real Cost of Removing Historic Windows

WALTER SEDOVIC and JILL H. GOTTHELF

Sustainability looks even better through a restored window.

MATERIALS	EMBODIED ENERGY MJ/kg	MJ/m3
Aggregate	0.10	150
Straw bale	0.24	31
Soil-cement	0.42	619
Stone (local)	0.79	2030
Concrete block	0.94	2350
Concrete (30 Mpa)	1.3	3180
Concrete precast	2.0	2760
Lumber	2.5	1380
Brick	2.5	5170
Cellulose insulation	3.3	112
Gypsum wallboard	6.1	5890
Particle board	8.0	4400
Aluminum (recycled)	8.1	21870
Steel (recycled)	8.9	37210

For all the brilliance reflected in efforts to preserve historic buildings in the U.S., the issue of replacing windows rather than restoring them remains singularly unresolved. Proponents on both sides of the issue may easily become frustrated by a dearth of useful data, as well as conflicting information, or misinformation, promulgated by manufacturers. Indeed, it often seems that many preservation practitioners and building owners remain in the sway of advertising claiming that the first order of business is to replace old windows. In the context of preservation and sustainability, however, it is well worth reconsidering this approach.

Sustainability and Authenticity

In considering alternatives to replacing historic windows, one needs to keep in mind two important elements: sustainability and authenticity. Sustainability (building green) and historic preservation, in this case, windows — without fully evaluating the consequences. Once authentic material is lost, it is lost forever. It does not matter how accurate the replacement window, it never reflects the nuances of the original.

Taking the Long View

Historic windows possess aesthetic and material attributes that simply cannot be replaced by modern replacement windows. Like preserving whole buildings, restoring historic windows is a solid step forward into the realm of sustainability. The present approach to sustainability, however, still too often focuses on new construction and issues such as "intelligent" windows and energy efficiency, while overlooking other important, holistic benefits of preserving historic windows, such as the following:

- Conservation of embodied energy (i.e., the sum total of the energy

5. Unveil synergies of program and design strategies…

adhesives and composite wood products.

FSC wood used throughout this project is certified by the Forest Stewardship Council as sustainably managed.

dvanced glazing systems duce electric light use and aximizing daylight while inimizing winter heat loss, air iltration, and summertime at gains.

Natural ventilation is provided through operable windows and skylights.

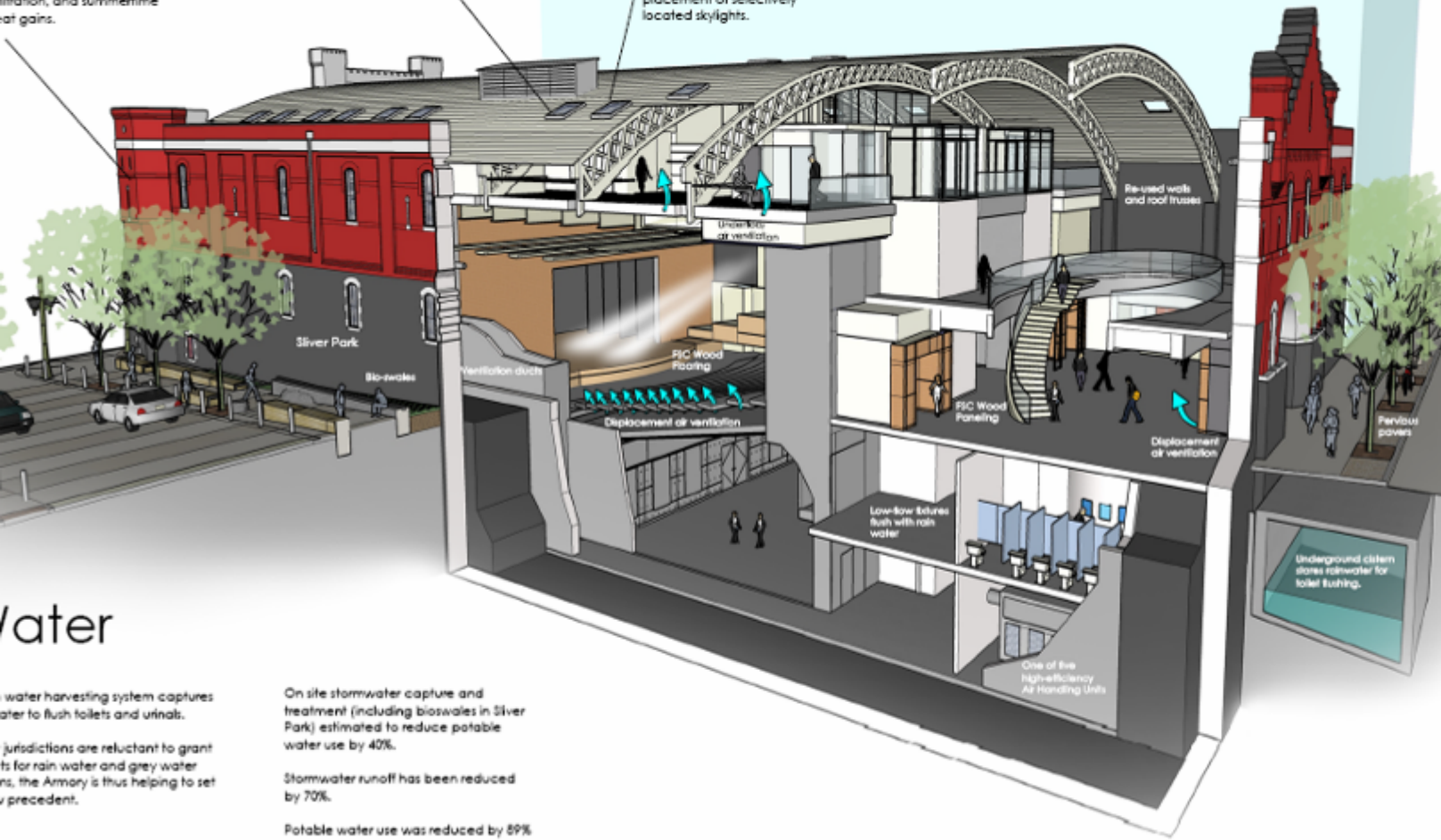
Daylighting is introduced into the building by the placement of selectively located skylights.

Brownfield site mitigatio followed.

A FlexCar shared car is adjacent to site.

Carpool drop-off area i theater.

30 bicycle parking spot shower facilities make b easier for employees, vi patrons.



Water

water harvesting system captures ater to flush toilets and urinals.

jurisdictions are reluctant to grant ts for rain water and grey water rs, the Armory is thus helping to set precedent.

On site stormwater capture and treatment (including bioswales in Sliver Park) estimated to reduce potable water use by 40%.

Stormwater runoff has been reduced by 70%.

Potable water use was reduced by 89% with rainwater harvesting. The 10,000 gallon cistern collects rainwater from the roof, filters and delivers it to toilets and urinals.

Innovati Design F

The Natural Step Principles were construction of the building.

More than 45% of building mate manufactured or harvested, m requirement.

The project has already provide construction and plans to conti complete. The goal is to share t project and educate the gene about the principles of sustaina

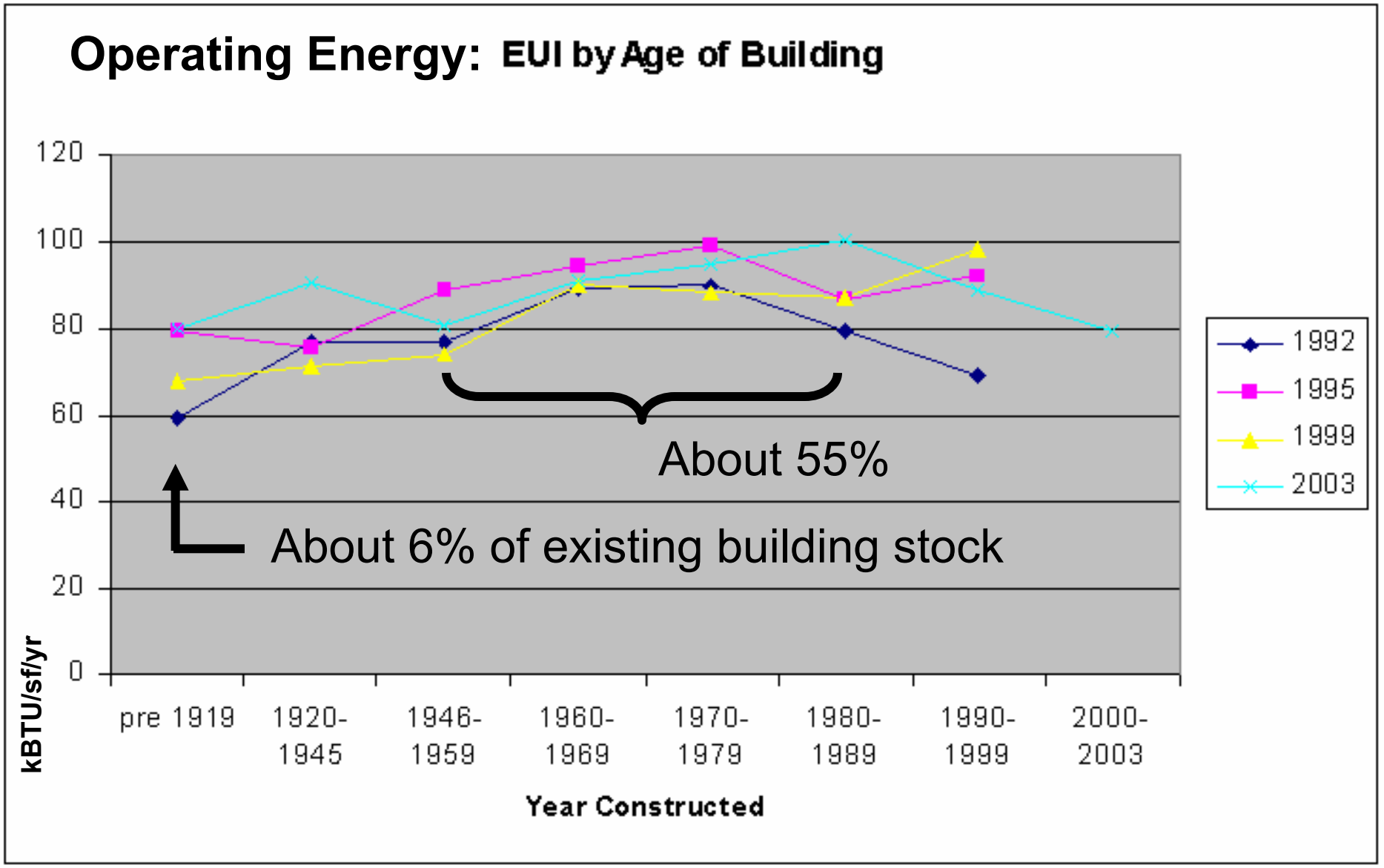

CAT


Link-Belt


SUNBELT
RENTALS
660SJ


EXIT

What have we learned?



Thank you!

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